

PATENT

Attorney Docket 020174C-001810US
118C.210USATTENTION: Examiner A. Chakrabarti
FACSIMILE NO.: 703-872-9307

Group Art Unit 1634

CERTIFICATE OF TRANSMISSION UNDER 37 CFR § 1.8

OFFICIAL

I hereby certify that the following documents in re Application of STEPHEN R. QUAKE et al., Serial No. 09/707,737 filed November 6, 2000 for METHODS AND APPARATUS FOR ANALYZING POLYNUCLEOTIDE SEQUENCES are being facsimile transmitted to the United States Patent and Trademark Office on the date **FAX RECEIVED** shown below.

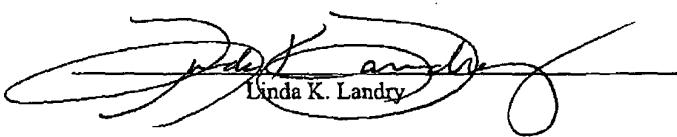
MAR 14 2003

Document(s) Attached**GROUP 1600**

1. Transmittal Form
2. Fee Transmittal for FY 2002
3. Petition for Extension of Time Under 37 CFR 1.136(a)
4. Request for Continued Examination (RCE) Transmittal
5. Request for Continued Examination Under 35 USC. § 114, Response Under 35 USC §111

Number of pages being transmitted, including this page: eight (8)

Dated: 13 March 2003


Linda K. Landry

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PTO/SB/21 (08-00)

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TRANSMITTAL FORM

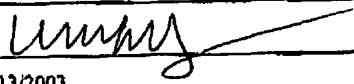
(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	Application Number	09/707,737
	Filing Date	11/06/2000
	First Named Inventor	Quake
	Group Art Unit	1634
	Examiner Name	A. Chakrabarti
	Attorney Docket Number	20174C-001810US

ENCLOSURES (check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Assignment Papers (for an Application)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input checked="" type="checkbox"/> Amendment / Reply	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input checked="" type="checkbox"/> After Final	<input type="checkbox"/> Petition	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Power of Attorney, Revocation	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Change of Correspondence Address	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Terminal Disclaimer	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		
Remarks		
REQUEST FOR CONTINUED EXAMINATION INCLUDED		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	William M. Smith	Reg. No. 30,223
Signature		
Date	03/13/2003	

CERTIFICATE OF MAILING

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FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT (\$ 1,100.00)

Complete If Known

Application Number	09/707,737
Filing Date	11/06/2000
First Named Inventor	Quzake
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METHOD OF PAYMENT		FEE CALCULATION (continued)																																																																																																																									
<p>1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:</p> <p>Deposit Account Number 502508</p> <p>Deposit Account Name Fluidigm Corporation</p> <p><input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17</p> <p><input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27</p>		<p>3. ADDITIONAL FEES</p> <table border="1"> <thead> <tr> <th>Large Entity Fee</th> <th>Small Entity Fee</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr> <td>105 430</td> <td>205 65</td> <td>Surcharge - late filing fee or both</td> <td></td> </tr> <tr> <td>127 50</td> <td>227 25</td> <td>Surcharge - late provisional filing fee or cover sheet</td> <td></td> </tr> <tr> <td>139 130</td> <td>139 130</td> <td>Non-English specification</td> <td></td> </tr> <tr> <td>147 2,520</td> <td>147 2,520</td> <td>For filing a request for ex parte reexamination</td> <td></td> </tr> <tr> <td>112 920*</td> <td>112 920*</td> <td>Requesting publication of SIR prior to Examiner action</td> <td></td> </tr> <tr> <td>113 1,840*</td> <td>113 1,840*</td> <td>Requesting publication of SIR after Examiner action</td> <td></td> </tr> <tr> <td>116 110</td> <td>215 55</td> <td>Extension for reply within first month</td> <td></td> </tr> <tr> <td>116 400</td> <td>216 200</td> <td>Extension for reply within second month</td> <td></td> </tr> <tr> <td>117 920</td> <td>217 460</td> <td>Extension for reply within third month</td> <td></td> </tr> <tr> <td>118 1,440</td> <td>218 720</td> <td>Extension for reply within fourth month</td> <td></td> </tr> <tr> <td>128 1,880</td> <td>228 880</td> <td>Extension for reply within fifth month</td> <td></td> </tr> <tr> <td>119 320</td> <td>219 160</td> <td>Notice of Appeal</td> <td></td> </tr> <tr> <td>120 320</td> <td>220 160</td> <td>Filing a brief in support of an appeal</td> <td></td> </tr> <tr> <td>121 280</td> <td>221 140</td> <td>Request for oral hearing</td> <td></td> </tr> <tr> <td>138 1,510</td> <td>138 1,510</td> <td>Petition to institute a public use proceeding</td> <td></td> </tr> <tr> <td>140 110</td> <td>240 55</td> <td>Petition to revive - unavoidable</td> <td></td> </tr> <tr> <td>141 1,280</td> <td>241 640</td> <td>Petition to revive - unintentional</td> <td></td> </tr> <tr> <td>142 1,280</td> <td>242 640</td> <td>Utility issue fee (or reissue)</td> <td></td> </tr> <tr> <td>143 480</td> <td>243 230</td> <td>Design issue fee</td> <td></td> </tr> <tr> <td>144 620</td> <td>244 310</td> <td>Plant issue fee</td> <td></td> </tr> <tr> <td>122 130</td> <td>122 130</td> <td>Petitions to the Commissioner</td> <td></td> </tr> <tr> <td>123 50</td> <td>123 50</td> <td>Processing fee under 37 CFR 1.17(q)</td> <td></td> </tr> <tr> <td>126 180</td> <td>126 180</td> <td>Submission of Information Disclosure Stmt</td> <td></td> </tr> <tr> <td>581 40</td> <td>581 40</td> <td>Recording each patent assignment per property (times number of properties)</td> <td></td> </tr> <tr> <td>146 740</td> <td>248 370</td> <td>Filing a submission after final rejection (37 CFR 1.129(a))</td> <td></td> </tr> <tr> <td>148 740</td> <td>249 370</td> <td>For each additional invention to be examined (37 CFR 1.129(b))</td> <td></td> </tr> <tr> <td>179 740</td> <td>279 370</td> <td>Request for Continued Examination (RCE)</td> <td></td> </tr> <tr> <td>169 800</td> <td>169 800</td> <td>Request for expedited examination of a design application</td> <td></td> </tr> <tr> <td colspan="2">Other fee (specify) _____</td> <td colspan="2">SUBTOTAL (3) (\$ 1,100.00)</td> </tr> </tbody> </table>		Large Entity Fee	Small Entity Fee	Fee Description	Fee Paid	105 430	205 65	Surcharge - late filing fee or both		127 50	227 25	Surcharge - late provisional filing fee or cover sheet		139 130	139 130	Non-English specification		147 2,520	147 2,520	For filing a request for ex parte reexamination		112 920*	112 920*	Requesting publication of SIR prior to Examiner action		113 1,840*	113 1,840*	Requesting publication of SIR after Examiner action		116 110	215 55	Extension for reply within first month		116 400	216 200	Extension for reply within second month		117 920	217 460	Extension for reply within third month		118 1,440	218 720	Extension for reply within fourth month		128 1,880	228 880	Extension for reply within fifth month		119 320	219 160	Notice of Appeal		120 320	220 160	Filing a brief in support of an appeal		121 280	221 140	Request for oral hearing		138 1,510	138 1,510	Petition to institute a public use proceeding		140 110	240 55	Petition to revive - unavoidable		141 1,280	241 640	Petition to revive - unintentional		142 1,280	242 640	Utility issue fee (or reissue)		143 480	243 230	Design issue fee		144 620	244 310	Plant issue fee		122 130	122 130	Petitions to the Commissioner		123 50	123 50	Processing fee under 37 CFR 1.17(q)		126 180	126 180	Submission of Information Disclosure Stmt		581 40	581 40	Recording each patent assignment per property (times number of properties)		146 740	248 370	Filing a submission after final rejection (37 CFR 1.129(a))		148 740	249 370	For each additional invention to be examined (37 CFR 1.129(b))		179 740	279 370	Request for Continued Examination (RCE)		169 800	169 800	Request for expedited examination of a design application		Other fee (specify) _____		SUBTOTAL (3) (\$ 1,100.00)	
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SUBMITTED BY		Complete (if applicable)	
Name (Print/Type)	William M. Smith	Registration No. (Attorney/Agent)	30,226
Signature	<i>Wm</i>	Telephone	650 266 6050
		Date	03/13/2003

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PTO/SB/30 (08-00)

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**REQUEST
FOR
CONTINUED EXAMINATION (RCE)
TRANSMITTAL**

Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000, provides for continued examination of an utility or plant application filed on or after June 8, 1985.

See The American Inventors Protection Act of 1999 (AIPA).

Application Number	09/707,737
Filing Date	11/06/2000
First Named Inventor	Quake
Group Art Unit	1634
Examiner Name	A. Chakrabarti
Attorney Docket Number	20174C-001810US

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.

NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.63 (d) (PTO/SB/28) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 15, 2000); Interim Rule, 68 Fed. Reg. 14866 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 67 (Apr. 11, 2000), which established RCE practice.

1. Submission required under 37 C.F.R. § 1.114

- a. Previously submitted
 - i. Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on _____ (Any unentered amendment(s) referred to above will be entered).
 - ii. Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
 - iii. Other _____
- b. Enclosed
 - i. Amendment/Reply
 - ii. Affidavit(s)/Declaration(s)
 - iii. Information Disclosure Statement (IDS)
 - iv. Other _____

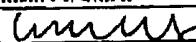
2. Miscellaneous

- a. Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(l) required)
- b. Other _____

3. Fees The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.

- a. The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 502508
 - i. RCE fee required under 37 C.F.R. § 1.17(e)
 - ii. Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)
 - iii. Other _____
- b. Check in the amount of \$ _____ enclosed
- c. Payment by credit card (Form PTO-2038 enclosed)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	William M. Smith	Registration No. (Attorney/Agent)	30,223
Signature		Date	03/13/2003

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PATENT

ATTORNEY DOCKET 020174-00181US
118C.210US
Application Serial No. 09/707,737

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s) Quake, et al.	Art Unit: 1634
Appl. No.: 09/707,737	Examiner: A. CHAKRABARTI
Filed: Nov. 6, 2000	REQUEST FOR CONTINUED
Title: METHODS AND APPARATUS FOR ANALYZING POLYNUCLEOTIDE SEQUENCES	EXAMINATION UNDER 35 U.S.C. §114
	RESPONSE UNDER 35 U.S.C. §111

Assistant Commissioner for Patents
Washington, D.C. 2023

Sir,

In response to the Office Action mailed October 1, 2002, Applicants provide this Request for Continued Examination and Response. Reconsideration of the application mentioned above is respectfully requested.

REQUEST FOR CONTINUED EXAMINATION

Applicants hereby request continued examination of the above-captioned application under 35 U.S.C. §114. A response under 35 U.S.C. §111 is supplied herewith.

RESPONSE

This reply is made in response to an Advisory Action mailed October 1, 2002, such Action being provoked by Applicants timely response filed on September 13, 2002 to a Final Office Action mailed July 3, 2002. Applicants have carefully considered the Examiner's Advisory Action and provide this response. Reconsideration of the present application is respectfully requested.

PATENT

ATTORNEY DOCKET 020174-00181US
118C.210US
Application Serial No. 09/707,737

The Examiner maintains several rejections under 35 U.S.C. §103, stating the claimed invention is not patentable over Livak, *et al.*, (US 5,945,284), in view of Effenhauser, *et al.*, Analytical Chemistry (1997) 69:3451-3457, and in further view of Craighead (US 6,214,246 B1), along with other different references. Applicants respectfully traverse these rejections for the following, additional reasons.

Applicants have addressed the Livak-Effenhauser-Craighead containing combinations in prior responses. In addition to those arguments, Applicants politely point out that the Examiner's reliance upon Craighead to impart in the Examiner's combination the currently recited claim limitation of "multilayer elastomeric" is misguided and improper. Nowhere in Craighead is an elastomeric material disclosed or suggested. Indeed, Craighead teaches away from using an elastomeric material to make its fluidic devices because the pillars of Craighead would collapse if made of elastomeric material due to their high-aspect ratio shape. Craighead only discloses or suggests rigid materials such as glass, quartz, silicon, or plastic materials. Craighead further discloses the reason for using rigid materials by forming an artificial gel within the reaction chamber by providing erect, high-aspect ratio pillars formed from such rigid materials.

Structures . . . have been produced in silicon dioxide, silicon, germanium, polymers, and metals. In one example, pillars were etched 400 nm deep into silicon by Cl₂ reactive ion etch, with the pillar size and separation being approximately 100 nm. The size, shape, and spacing of these pillars, when used as an artificial gel material, affects the DNA motion in the sequencing of DNA fragments. Craighead, Column 10, lines 30-37

Moreover, Craighead emphasizes that the "a substrate carries a plurality of upstanding pillars arranged in linear, or channelized, arrays on, and extending upwardly from, the surface of [the] substrate . . ." (column 10, lines 36-38). The artificial gel is then formed by the interaction between the liquid introduced into the chamber and the erect, high-aspect ratio pillars.

[E]ach of the sample channels . . . contain a highly porous medium for sample separation in electrophoretic analysis. This porous medium functions as an artificial gel for the sample, and is

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Application Serial No. 09/707,737

comprised of parallel pillars, such as the pillars illustrated in Fig. 7, which extend the full depth of the sample channels. Craighead, Column 9, lines 12-18.

Forming the pillars from an elastomeric material would not produce the "upstanding" pillars of Craighead, but rather, bent-over or collapsed pillars. Thus, Craighead, by its need for "upstanding" pillars, impliedly teaches away from using an elastomeric material because using an elastomeric material would defeat the purpose of the pillars and thus render the Craighead device inoperable for the use disclosed by Craighead. It is well settled that a reference cannot be used in a combination that would defeat the purpose of that reference, and/or where such a reference teaches away from making the claimed invention. Accordingly, Applicants respectfully request withdrawal of these rejections because Craighead cannot be reasonably said to teach or suggest using an elastomer.

CONCLUSION

Applicants believe the claim is now in condition for allowance for the foregoing reasons. Accordingly, Applicants respectfully request a Notice of Allowance. If, in the Examiner's opinion, a telephone conference may be helpful, Applicants' counsel may be contacted at the number below.

Very truly yours,



William M. Smith
Reg. No. 30,223

Fluidigm Corporation
7100 Shoreline Court
So. San Francisco, CA, 94080
(650) 266-6036
(650) 871-7195